## ABSTRACT OF THE INVENTION

A method of turbo decoding using soft input-soft output information. A vector of data is sampled from a channel of data. The vector of data is then processed to output a final code word of bits. A final reliability vector of reliability values associated with the final code word is generated, such that each bit of the final code word of bits has a corresponding reliability value in the final reliability vector. Corresponding reliability values for one or more bit positions of the final code word are determined by a difference of distance metrics, and corresponding reliability values for one or more bit positions of the final code word are determined utilizing a numerical approximation.